

REMARKS/ARGUMENTS

The Examiner found that claims 6, 16, and 30 would be allowed if rewritten in independent form. (OA3, pg. 5) Applicants submit that these claims are patentable over the cited art in their current form because the base claims 1, 11, and 25 from which they depend are patentable over the cited art for the reasons discussed below.

1. Claims 1-4, 8-14, 17-28, and 32-34 are Patentable Over the Cited Art

The Examiner rejected claims 1-4, 8-14, 17-28, and 32-34 as anticipated (35 U.S.C. §102) by Gardner (U.S. Patent Pub. No. 2003/0198247). Applicants traverse.

Independent claims 1, 11, 23, and 25 require establishing a connection with a link partner at a common transmission speed; setting a duplex mode used for transmissions to a first duplex mode; monitoring a transmission error rate with the link partner; changing the duplex mode to a second duplex mode in response to detecting that the transmission error rate exceeds a threshold.

The Examiner cited paras. 9 and 10 of Gardner as disclosing the requirement of changing a first duplex mode to a second duplex mode in response to detecting that a transmission error rate exceeds a threshold. (OA3, pg. 3) Applicants traverse.

The cited para. 9 mentions that a network device transmits to a second network device over a network link in a half duplex mode. While transmitting in half duplex mode, the first network device detects a collision on the network link indicative of a potential misconfiguration of the second network device, and upon so detecting, the first network device transmits in a full duplex mode. The collision may be a late collision or a collision that has occurred at an excessive rate.

According to Gardner, a collision involves a situation where a device detects that the transmission on the medium is different from what has been sent, typically resulting from two devices transmitting at a same time. The rate of normal collisions is generally low in a properly operating network link, and excessive rate of collisions is also indicative of an error condition. (Gardner, para. 6).

Although the cited para. 9 mentions switching the duplex mode if collisions are detected indicative of a potential misconfiguration, which occurs if the transmission is different from what has been sent, there is no disclosure of monitoring a transmission error rate and then changing the duplex mode if the transmission error rate exceeds a threshold. The cited para. 9 does not

disclose monitoring a transmission error rate and comparing with a threshold, but instead mentions changing the duplex mode upon determining that a number of collisions indicates a misconfiguration which typically occurs when devices transmit at the same time. Applicants submit that this discussion of detecting a collision indicative of a potential misconfiguration does not disclose the claim requirement of changing the duplex mode in response to determining that a transmission error rate exceeds a threshold.

The cited para. 10 mentions that while the first network device is transmitting in the full duplex mode, the first network device monitors for an error indicating that the second network device remains misconfigured. Examples of such an error include excessive frame check sequence error. If such an error occurs, the first network device discontinues transmitting to the second network device, and the condition is reported to a higher level operating software.

Although the cited para. 10 mentions discontinuing transmitting if after changing to full duplex mode the error indicative of misconfiguration continues, this does not disclose the claim requirement of changing the duplex mode in response to determining that a transmission error rate exceeds a threshold. Instead, the cited para. 10 stops transmitting if the misconfiguration is detected in full duplex mode, which does not comprising changing to a different duplex mode because terminating transmission is not the same as changing the duplex mode as claimed.

Accordingly, claims 1, 11, 23, and 25 are patentable over the cited art because the cited Gardner does not disclose all the claim requirements.

Claims 2-4, 8-10, 12-14, 17-22, 24, 26-28, and 32-34 are patentable over the cited art because they depend from one of base claims 1, 11, 23, and 25, which are patentable over the cited art for the reasons discussed above.

Claims 3 13, and 27 depend from claims 1, 11, 25, respectively, and further require that he first duplex mode comprises full duplex and the second duplex mode comprises half duplex.

The Examiner cited para. 14 as disclosing the requirements of these claims. (OA3, pg. 3) Applicants traverse.

The cited para. 14 discusses how a port upon auto-negotiation may negotiate full duplex or half duplex on the attached link. This does not disclose that the duplex mode is changed from full to half duplex upon detecting that a transmission error rate exceeds a threshold.

Moreover, the cited para. 9 mentions changing the duplex mode from half to full if a misconfiguration is detected and para. 10 mentions terminating transmission if misconfiguration

is detected while transmitting in full duplex mode. However, the Examiner has not cited any part of Gardner that discloses that the duplex mode is changed from full to half upon detecting that a transmission error rate exceeds a threshold while transmitting in full duplex mode as claimed.

Accordingly, claims 3, 13, and 27 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Gardner.

Claims 9, 19, and 33 depend from claims 1, 11, and 25, respectively, and further require that the monitored transmission error rate comprises a bit error ratio of a number of bits received in error to a total number of bits received within a predefined time window.

The Examiner cited para. 16, lines 14-15 of Gardner as disclosing the additional requirements of these claims. (OA3, pg. 3) Applicants traverse.

The cited para. 16 mentions that collisions may occur during an interval of a minimum size message of 64 bytes and collisions occurring after 64 bytes have been transmitted are late collisions indicative of an error condition.

Although the cited para. 16 discusses how collisions may occur at different points during a transmission and may indicate an error condition, this does not disclose monitoring for a transmission error rate comprising a bit error ratio of a number of bits received in error to total received within a time window. The cited para. 16 does not disclose or mention monitoring for a bit error ratio as claimed, and instead discusses collisions or errors that occur during an interval of a message transmission and after.

Accordingly, claims 9, 19, and 33 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Crayford.

Claims 10, 20, and 34 depend from claims 1, 11, and 25, respectively, and further require continuing to monitor the transmission error rate with the link partner after changing the duplex mode; and changing the duplex mode from one of the first to second duplex mode or from the second to first duplex mode in response to detecting that the transmission error rate exceeds the threshold.

Applicants could not locate where the Examiner cited art as anticipating or rendering obvious the requirements of claims 10, 20, and 34. Applicants request the Examiner to withdraw

the rejection of these claims or issue a new rejection explaining which art renders claims 10, 20, and 34 unpatentable.

2. Claims 5, 7, 15, 17, 29, and 31 are Patentable Over the Cited Art

The Examiner rejected claims 5, 7, 15, 17, 29, and 31 as obvious (35 U.S.C. §103(a) over Gardner in view of Yang (U.S. Patent No. 5,414,700). Applicants traverse.

These claims are patentable over the cited art because they depend from one of claims 1, 11, and 25, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide additional grounds of patentability over the cited art.

Claims 5, 15, and 29 depend from claims 1, 11, and 25, respectively, and further require that the duplex mode is changed to the second duplex mode by setting a flag in a hardware register to cause the hardware to transmit in the second duplex mode while maintaining the connection with the link partner.

The Examiner cited col. 13, lines 14-19 of Yang as teaching these additional claim requirements. (OA3, pgs. 4-5) Applicants traverse.

The cited col. 13 mentions an EnteringFDX binary flag indicating a transition into full duplex operation starting on receipt of an FDX ack frame. Although the cited col. 13 mentions a flag providing information on transition to full duplex mode, this does not teach setting a flag to cause hardware to change transmitting to second duplex mode while maintaining the connection. The Examiner has not cited where Yang teaches changing the duplex mode while the connection with the link partner is maintained.

The Examiner further cited col. 12, lines 46-57 of Yang. (OA3, pg. 4) This cited col. 12 discusses variables used in the node test and full duplex control protocol, such as a variable indicating whether full duplex operation is enabled and the status of full duplex operation, a variable that determines the MAC's operational mode, and upstream and downstream neighbor addresses. Although variables related to full duplex mode are discussed, the cited col. 12 does not teach setting a flag to cause hardware to change transmitting to a second duplex mode while maintaining the connection. Instead, the cited variables concern indicating a duplex mode.

Accordingly, claims 5, 15, and 29 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited Crayford and Yang.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-34 are patentable. Should any additional fees be required beyond those paid, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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